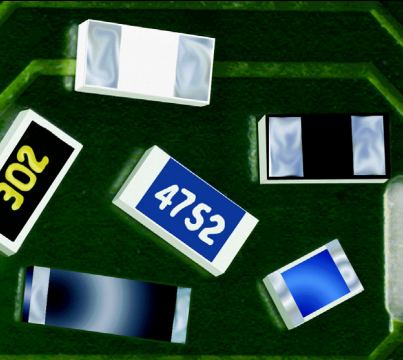


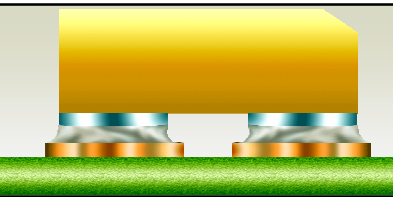
**SURFACE MOUNT TECHNOLOGY (SMT)**  
**CHIP COMPONENTS / BOTTOM-ONLY TERMINATIONS**



**CHIP COMPONENTS  
BOTTOM-ONLY TERMINATIONS**

The mechanical properties of the solder joints of bottom-only terminations are slightly reduced from those of 1-3-5 chip components, as only the metallized termination pads on the underside of the component are available for mechanical and electrical attachment to the printed wiring board. The bottom only termination presents some difficulty during visual inspection, as very little of the actual termination is exposed or visible.

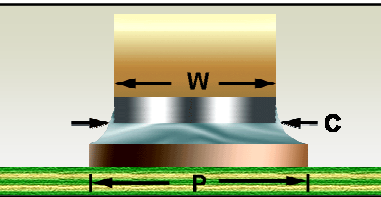
See Section 7.01 "Surface Mount Soldering, General Requirements", for common accept / reject criteria.



**PREFERRED**

The component is properly centered between the lands and exhibits acceptable solder thickness and tilt. No mechanical or heat damage is evident.

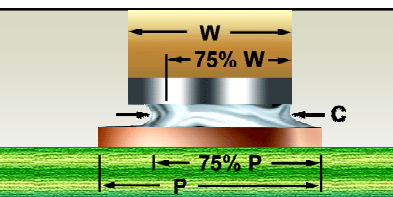
[NASA-STD-8739.2 \[ 12.9.1 \]](#)



**PREFERRED  
END JOINT WIDTH (C)**

The width of the end joint is equal to the width of the component (W), and extends to the width of the land (P).

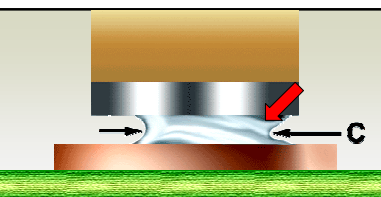
[Best Workmanship Practice](#)



**ACCEPTABLE  
END JOINT WIDTH (C)**

End joint width shall not be less than 75% of the component termination width (W) or less than 75% of the land width (P).


[Best Workmanship Practice](#)



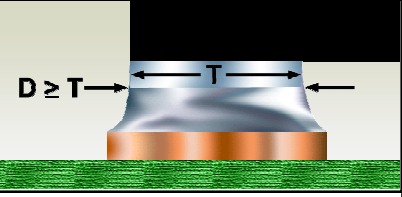
**UNACCEPTABLE  
INSUFFICIENT END JOINT WIDTH (C)**

An end joint of insufficient width indicates that there may be solderability problems that may adversely impact the long-term reliability and integrity of the solder termination

[Best Workmanship Practice](#)

<b>NASA WORKMANSHIP STANDARDS</b>			
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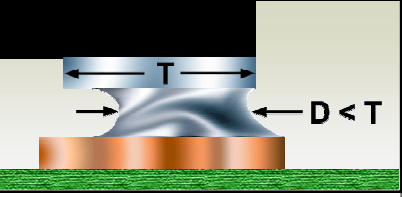
**SURFACE MOUNT TECHNOLOGY (SMT)**  
**CHIP COMPONENTS / BOTTOM-ONLY TERMINATIONS (cont.)**



**PREFERRED  
SIDE JOINT LENGTH (D)**

The length of the side joint fillet equals or exceeds the component termination pad length (T).

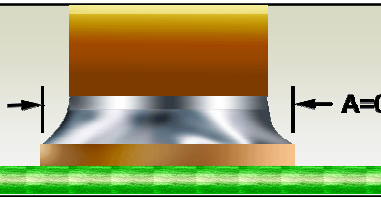
[Best Workmanship Practice](#)



**ACCEPTABLE  
SIDE JOINT LENGTH (D)**

Any side joint length is acceptable, provided there is evidence of a side joint, and all other joint parameters are met.

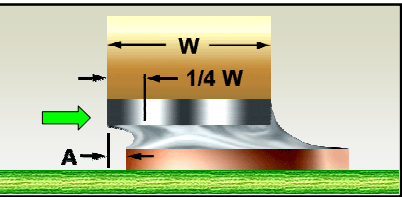
[Best Workmanship Practice](#)



**PREFERRED  
SIDE / LATERAL OVERHANG (A)**

The component is centered on the pads, with no side / lateral overhang (A).

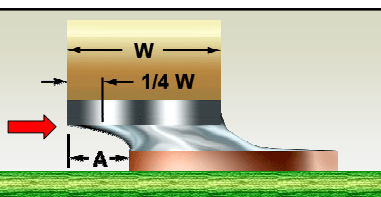
[NASA-STD-8739.2 \[ 8.7.4.g.1 \]](#)



**ACCEPTABLE  
SIDE / LATERAL OVERHANG (A)**

Side overhang shall not exceed 25% of the part width (W) and the minimum end joint width (C) requirements shall be met.

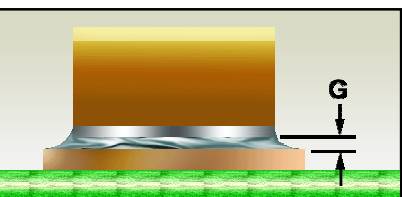
[NASA-STD-8739.2 \[ 8.7.4.g.1 \]](#)



**UNACCEPTABLE  
EXCESS SIDE / LATERAL OVERHANG (A)**

Side overhang in excess of 25% of the part width (W) and/or the minimum end joint width (C) may impact the long-term reliability and integrity of the solder termination.


[NASA-STD-8739.2 \[ 12.9.1.b.7 \]](#)

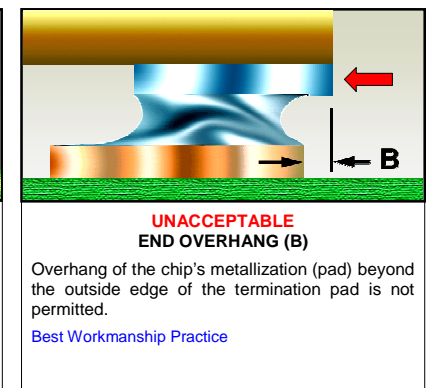
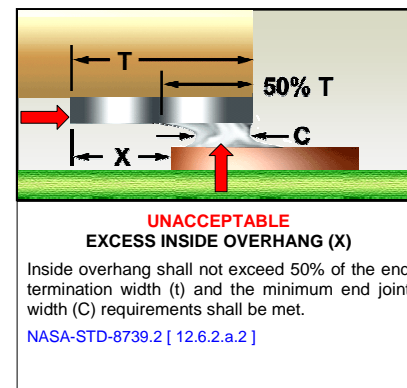
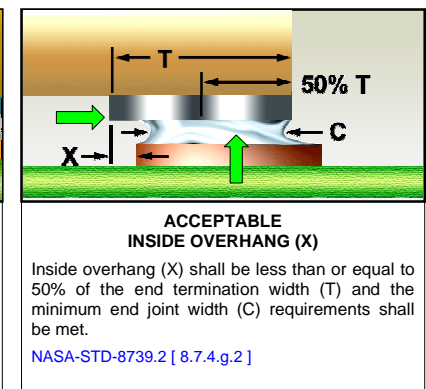
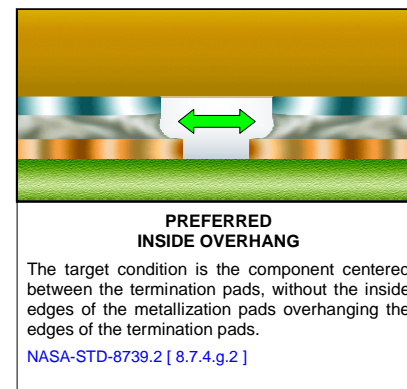
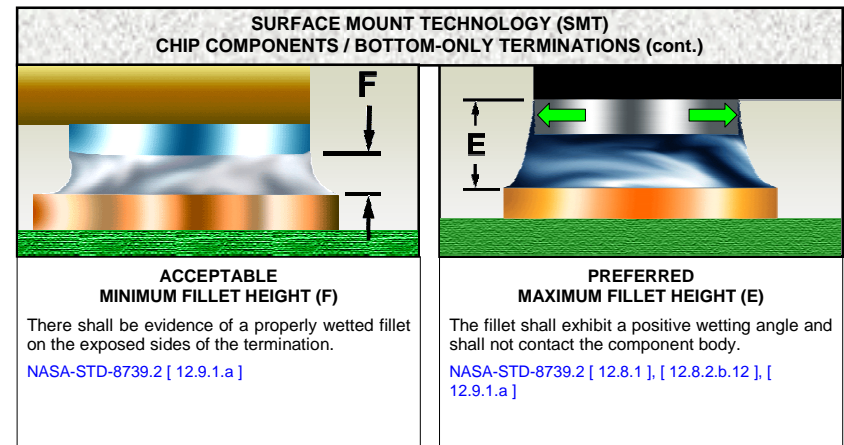
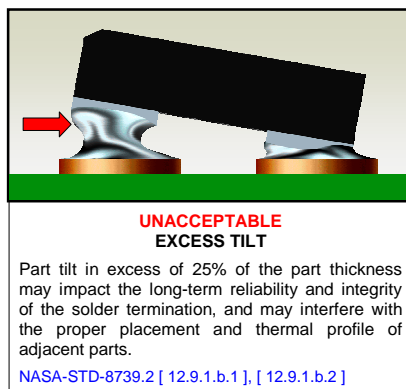
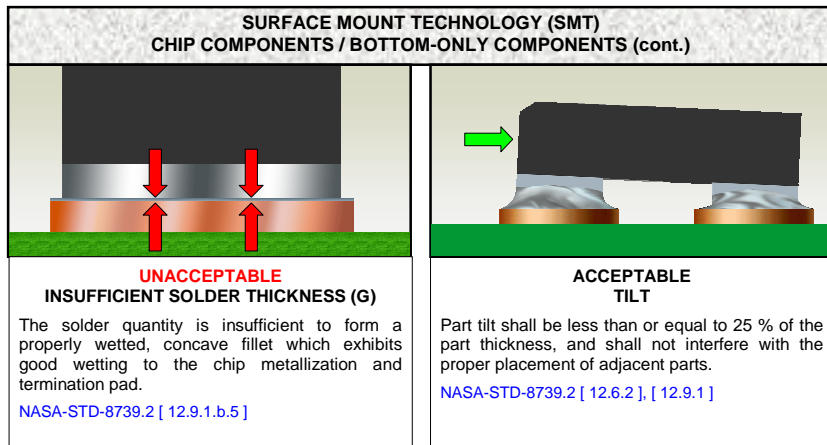



**ACCEPTABLE  
MINIMUM SOLDER THICKNESS (G)**


The solder quantity shall be sufficient to form a properly wetted, concave fillet on the vertical surfaces of the chip, and which exhibits good wetting to the chip metallization and termination pad.

[NASA-STD-8739.2 \[ 12. 8.1.b \], \[ 12.9.1.a \]](#)

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